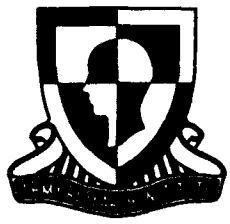

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for the Behavioral and Social Sciences

Research Report 1659

A Comparison of Information in the Joint Readiness Training Center Archival Records

Jean L. Dyer
U.S. Army Research Institute

January 1994

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

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13. ABSTRACT *(Maximum 200 words)*

For this report, a comparative analysis was conducted of three primary archival data sources from the Joint Readiness Training Center (JRTC): the take home packages (THPs), company and task force after action reviews (AARs), and the training and evaluation outline (T&EO) data base. Task force and enemy missions/organizations, battle damage assessments, company tasks and performance, and critical incidents affecting mission performance were examined. This case study of two FY90 JRTC rotations was part of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) research effort on unit training and performance at the Combat Training Centers. Each source contained unique information. Sources complemented and supplemented each other, due partly to their differing purposes and the selectivity in the information reported. Sources also differed in ease of use, with the THPs and the paper copy of the task force AARs the most user-friendly. The THP, when complemented by the paper copy and video tape of the task force AAR, will give most archive users a good understanding of each mission. When questions of interest narrow to specific systems, conditions, and/or missions, then all sources should be examined. The archive is located at the ARI Field Unit at Presidio of Monterey, CA.

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A Comparison of Information in the Joint Readiness Training Center Archival Records

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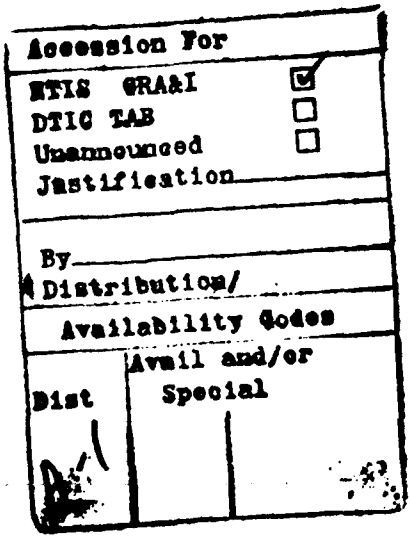
Education and Training

FOREWORD

The Training Systems Research Division of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) has conducted a research program to increase unit combat readiness by identifying home station determinants of performance. The initial research was on Armor and Mechanized Infantry battalions and task forces. This research was expanded to include Light Infantry battalions that train at the Joint Readiness Training Center (JRTC) at Fort Chaffee, Arkansas. The Light Infantry performance determinants program first concentrated on training and related issues within the battalion. However, new issues emerged from this research that merited continued investigation to support innovative and effective training research and development solutions.

A follow-on effort to the initial research with Light Infantry was a comparative, secondary analysis of the archival records of performance provided by the JRTC. These sources serve several functions, including feedback to units to improve their combat readiness and a historical record of Light Infantry performance. The three primary archival data sources from the JRTC were compared to determine the best source for addressing questions asked about unit performance. These sources were the take home packages (THPs), the company and task force after action reviews (AARs), and the training and evaluation outline (T&EO) data base. The areas examined were task force mission performance and organization, battle damage assessment, rifle company performance, and critical mission incidents. The recommendations made for using these data sources will help proponent schools, unit personnel, and other Army agencies use the JRTC archive to address training questions more effectively and efficiently.

This report summarizes work conducted during fiscal year (FY) 92 under ARI-Benning's Combat Training Team working on the task entitled Light (Infantry) Forces Training and Performance Measurement. The research was sponsored by the U.S. Army Combined Arms Command (Training) and conducted under a Memorandum of Agreement established between ARI and the command in May 1988.



EDGAR M. JOHNSON
Director

A COMPARISON OF INFORMATION IN THE JOINT READINESS TRAINING CENTER ARCHIVAL RECORDS

EXECUTIVE SUMMARY

Requirement:

The three primary data sources in the Joint Readiness Training Center (JRTC) archive were compared to determine the best source for addressing questions asked about unit performance. These data sources were the task force and company after action reviews (AARs), the take home packages (THPs), and the training and evaluation outlines (T&EOs).

Procedure:

Two FY90 task force rotations to JRTC were examined. Comparisons among the data sources for these two rotations included mission summaries and force organizations, battle damage assessment, rifle company performance, and critical mission incidents. The AARs for each mission were analyzed; that is, video tapes of 7 task force and 20 company AARs were analyzed. A content analysis was applied to the written transcript of each AAR as well as to the THP documents. Because of missing data and errors in the T&EO statistical data base, very little of this information could be used.

Findings:

Each archival record contained unique information; no single source was the best. THPs covered the greatest variety of material. AARs provided the most complete record of mission dynamics. A good understanding of each mission and task force performance was attained by supplementing the THP with the task force AARs. The data sources were consistent with each other. However, the depth with which a topic was treated varied with the source. For specific topics of interest, such as casualty evacuation, night operations, or navigation, all data sources should be examined. Battalion staff preparing for a JRTC rotation will benefit from reviewing previous task force AARs; company leaders, from company AARs; and platoon leaders, from platoon AARs.

Utilization of Findings:

The guidelines in this report will allow individuals using JRTC archival records to address training questions effectively and efficiently.

A COMPARISON OF INFORMATION IN THE JOINT READINESS TRAINING CENTER ARCHIVAL RECORDS

CONTENTS

CONTENTS (Continued)

LIST OF TABLES

A COMPARISON OF INFORMATION IN THE JOINT READINESS TRAINING CENTER ARCHIVAL RECORDS

Introduction

The primary purpose of the Combat Training Centers (CTCs) is to provide realistic training for units, leaders, and soldiers. The importance of the CTC experience has been stressed in after action reports by units participating in Desert Storm. Further testimony to the importance and value of the CTCs is reflected in the fact that the Army has continued its support for the CTCs during downsizing in the early 1990s.

Because of the unique training opportunity provided at the CTCs, information gleaned from this experience is valuable not only to units, but also to proponent schools, the Training and Doctrine Command (TRADOC), Forces Command (FORSCOM), and other Army agencies. From the archival information, lessons learned have been generated and published in Center for Army Lessons Learned (CALL) newsletters. Trend line analyses have been conducted. Proponent schools have examined specific issues related to the development of doctrine, new equipment requirements, and training programs and strategies using the archive. Examples of special studies and analyses using the archive are Crawford and Hensler (1990), Snukis (1991), and Thompson, Thompson, Pleban, and Valentine (1991).

Purpose

The intent of this report is to compare the information in three primary data sources in the Joint Readiness Training Center (JRTC) archive. These sources are the take home packages (THPs), the task force (TF) and rifle company after action reviews (AARs), and the training and evaluation outlines (T&EOs). The archive is located at the U.S. Army Research Institute for the Behavioral and Social Sciences Field Unit, Presidio of Monterey, CA.

The three sources have different purposes and formats. Some material is common to two or all three of the sources, but much is not. This report illustrates how data from the sources can be used to provide the most complete picture of JRTC performance, particularly at the rifle company level. Information unique to a source is identified, and the best source for different content areas is determined. The following four areas are examined: task force and enemy missions and organizations, battle damage assessments, rifle company performance, and critical incidents and other factors affecting mission performance. Guidelines for using the archival data are also presented.

An advantage of the JRTC archival documents is that they are primary, not secondary, sources (Fox, 1969; Selltiz, Wrightsman, & Cook, 1976). Therefore, they document first-hand information; they are direct records of events. However, this does not mean that the recorded information is necessarily accurate or complete. Selective

perception, selective recall, and conscious or unconscious distortion of information can occur. The format and purpose of the data source also influence the information recorded. In addition, given the complexity of JRTC rotations and limits on resources for data collection, complete documentation of every event at JRTC cannot be provided by either a single source or a combination of sources. Information is omitted; the sources are selective.

Given these factors, it was expected that information on the areas of interest would vary across the three archival records. The T&EO is the most structured of the three sources; the Company AAR, the least structured. The T&EO checklist format provides for a standard comparison across time and units; that is, for each task, the same standards and subtasks are rated. On the other hand, the Company AAR is determined by the observer/controller (O/C). It is an "open-ended," "free response" type of record. Thus, there is no requirement to document what occurred in every area or every task at the same level of detail across all missions and all rotations. The same area may be covered in detail in one AAR and treated lightly in another. Part of the TF AAR follows a standard format. This facilitates comparisons across rotations. Other parts of the TF AAR are open-ended, resembling the format of the Company AAR.

Two factors should be considered regarding the findings and guidelines presented in this report. The analyses were based on case studies of two FY90 JRTC rotations. Changes in the type of information reported and the format of each archive have occurred in the past and are likely to occur in the future. Thus, users of archival data generated during a different time period need to be aware of the potential for variations in source data from that described here. In addition, the analyses focused on maneuver units. Data sources unique to other units (e.g., aviation, field artillery, combat service support) were not examined.

JRTC Archival Records

Task Force After Action Reviews (TF AARs). TF AARs are conducted by the senior O/C immediately after each mission or mission phase to provide training feedback. In the archive are video tapes of each AAR and a paper copy of the slides used during the AAR. These AARs are usually 2 hours and 30 minutes in length.

The typical AAR format is as follows (see also Appendix A). First, a short summary of the mission is given. This is followed by information on the enemy's mission and organization, the brigade mission and brigade commander's intent, the task force mission and task force commander's intent, and the task force organization. The senior O/C then asks task force personnel in key duty positions to identify the areas which they want to sustain based on mission performance. Areas which need to be improved are also identified.

The next major part of the AAR focuses on mission planning and preparation in key functional areas. Each battlefield operating system (BOS) is examined in this process.

Typically the areas include: intelligence support; fire support; the S-3's plan; air defense; close air support; engineers; command, control, and communications; and combat service support. Specific topics to be discussed by the O/C within each area are identified on the paper copy version of the TF AAR. Discussion of the impact of these areas on the mission is documented in the video AAR.

The other major part of the AAR is mission execution. The TF commander describes this phase, to include the scheme of maneuver, and integration of assets. All assets critical to the mission are discussed (e.g., aviation support, scouts, engineers). The company commanders describe mission execution from their perspective. Lessons learned and factors to consider in future missions are stressed.

The leader of the opposing force briefs his organization, and mission planning, preparation, and execution. He describes the strengths and weaknesses of the rotating unit. In addition, in the last TF mission AAR, all intelligence information collected by the opposing force on the unit during the rotation is described.

Key events, their sequence, and exact times are presented. Battle damage statistics are reviewed. Slides identifying major strengths and weaknesses in leader and individual skills, and in the planning, preparation, and execution phases are presented. Mission standards and BOS summaries are presented. The final AAR concludes with summary statements by the Commander, JRTC.

Company After Action Reviews (AARs). The Company AARs, typically 1 hour and 45 minutes in length, are conducted by the company O/C immediately after each mission phase. Only a video tape of Company AARs is available in the archive. No paper records are retained, although O/Cs typically use poster boards and graphics to illustrate points. When the AAR is conducted outside, the audio portion of the tape can be disrupted by interference from vehicle and aircraft noises and the wind.

The Company AARs are less structured than the TF AARs, being primarily a discussion and learning session. The format varies with the O/C. In addition, the sequence of topics and the specific topics discussed vary, depending upon the mission results and the training points the O/C has determined as critical. However, the AARs do cover the planning, preparation, and execution phases of each mission. In addition, a leader from the opposing force describes the enemy situation and comments on strengths and weaknesses of the rotating unit. Exchange of information between the O/C and unit personnel occurs throughout the AAR.

Take Home Packages (THPs). The THP is an O/C generated narrative of unit performance provided to each TF at the close of the rotation. The THP is written after completion of the rotation. Both paper and electronic (computer floppy disk) copies of the THPs are available from the archive.

The typical THP begins with a an overview of brigade task force trends in each of the seven battlefield operating systems (BOS) (Salter, in preparation). The battalion task force section of the THP contains a summary of the task force missions, by phase. For each mission, mission standards, an execution summary, BOS summaries, battle damage statistics, and fire support data are presented. There is also a section on battalion task force trends by BOS, which encompasses all missions. Strengths, areas in need of improvement, and training recommendations are provided.

The rifle company portion of the THP includes a summary of each mission conducted by each company. For each mission, a description of company strengths, areas in need of improvement, personnel casualties, and home station training recommendations are included (Salter, in preparation). The THPs used in this research also contained sections on leader and individual skills which cited strengths and areas in need of improvement. There is no section devoted to rifle platoons in the THP.

Similar summaries and descriptions are included for other elements, such as the Headquarters and Headquarters Company, scout platoon, antiarmor platoon, 81mm mortar platoon, combat trains, field trains, and medical platoon. These were not examined in this report. Appendix B indicates the sections of the THP used in this analysis.

Training and Evaluation Outline (T&EO) Data Base. The intent of the T&EO data base is to provide an archival record of performance ratings on units and echelons (Infantry, mortars, engineers, etc.; battalion, company, platoon). The data base is structured so information can be recorded by mission, phase of the rotation, date, and task force element.

Data for the T&EO data base are collected via checklist books filled out by JRTC O/Cs for the element and echelon to which they are assigned. Ideally, these checklists are completed at the end of each mission. However, frequently they are completed after the rotation, sometimes with a delay of one or two weeks (Fober, 1993).

The checklists were developed from Army doctrine. In the case of Infantry company and platoon data, the checklists for each task almost exclusively mirror the corresponding mission training plan (MTP) (Department of the Army, 1988; Fober, 1993). The company tasks within the T&EO are listed in Appendix C by the data base number. Associated with each task is an overall rating of "trained," "needs practice," and "untrained." Task standards, subtasks, and subtask standards fall under each task. Each of these categories is rated as a "go" or "nogo."

The T&EO data base is a computerized data base of the O/C ratings. The data are coded in a flat file format compatible for importing into the Statistical Package for the Social Sciences (SPSS). Standard statistical procedures can then be applied to the data.

General Procedures

Sample

Complete archival records (THPs, T&EOs, TF and Company AARs) were obtained on two FY90 rotations to JRTC. Both rotations were light Infantry, active Army units. The missions common to both units were Defend, Search and Attack, and Deliberate/Infiltration Attack.

Analysis of Archival Records

TF and Company After Action Reviews. The TF and Company AARs for each mission/mission phase were examined; a total of 7 TF AARs and 20 Company AARs. One Company AAR was not available from the archive. The platoon AARs were not examined because of the limited sample available. The JRTC policy at the time the research was conducted was to videotape only one platoon AAR per company per mission.

For both the TF and Company AARs, a written transcript was made of the audio portion of the tape. Whenever possible, the duty position of the person speaking was recorded on this transcript. In addition, graphics were copied from the tape when paper copy was not available or the paper copy was illegible. Whenever possible, the location and movement routes of TF elements were indicated on these graphics. In some instances, the paper copy of the TF slides did not include critical information on the video tape (e.g., TF organization). In such instances, this information was copied directly from the video tape. Coding procedures were developed for content analysis purposes.

Take Home Packages. Each company's THP was examined using the content analysis techniques and results described by Salter (in preparation). Salter developed a categorical scheme to record positive and negative comments made in the THPs on a series of tasks (see Appendix D). This scheme was applied to each mission conducted by each rifle company. The categories reflected the three phases of planning (troop leading procedures and leader tasks), preparation (supervision, inspections, and rehearsals), and execution (movement, attack, defend, command and control, combat service support, etc.). Similar coding schemes have been used in other analyses of THPs (e.g., Snukis, 1991).

Training and Evaluation Outlines. Company and platoon T&EOs have been examined in depth by Fober (1993). O/C ratings at the task, task standard, subtask, and subtask standard levels were analyzed for each mission and/or mission phase. The phrase "mission phase" is used to discriminate between missions which were divided into multiple phases. However, because of the amount of missing data and the errors in the data base, very little of the T&EO information could be used.

Fober's (1993) analysis included the six companies in the current research. This report does not include any of Fober's findings. The only data from the T&EO data base

reported here are the rifle company tasks. These tasks were identified by searching each company's data base for all company tasks listed under each mission and/or mission phase.

Content Examined

Comparisons of the three archival sources were made in four areas: mission summaries and force organizations, battle damage assessments, rifle company task performance, and critical mission incidents. Within each area, the analytic procedures used, the results, and a discussion and summary of the results are presented. Finally, recommendations are made regarding using the JRTC archive to obtain information in each area.

Mission Summaries and Force Organizations

Essential to any analysis of JRTC archival data is knowledge of the unit's and opposing force's missions, as well as the force organizations employed to accomplish those missions. The three JRTC archival sources were compared for the information available in these areas.

The analysis showed that the T&EOs do not describe missions or unit organizations. Therefore, the comparison was limited to the AARs and the THPs. The Battalion Task Force Mission Summary section of the THP was compared to the initial part of the TF AAR and the BOS summary slides at the end of the AAR. Table 1 shows the findings.

The summary information on the task force and enemy missions was very similar in the TF AAR and the THP. These sections gave an overview of the task force and company missions, the task force commander's concept of the mission, how major elements were deployed, and major events affecting the mission (e.g., weather, failure to complete critical tasks, key leader casualties, timeliness of close air support). Main actions by the enemy (e.g., intelligence gathered, fire support, type and amount of contact with the task force) were also described. Beginning and end of mission times were cited. Both summaries concluded with battle damage assessment information. In the TF AAR, the mission summary was supplemented by graphics.

For the units examined, the BOS sections for each mission were identical in the THP and the TF AAR. These descriptions were concise and short. In the THP, these were found in the System Summary for Phase section of the Battalion Task Force Mission Summary. They were at the very end of the TF AAR and also on the paper copy of the slides. It is important to note that detailed information on each BOS, across the entire rotation, is in the THP under the Battalion Task Force Trends annex. AARs are also conducted for such elements as close air support and combat service support, but were not examined in this analysis.

Table 1

Missions and Organizations: THP and AARs

	THP	AARs
TF Mission and Commander's Intent	In Mission Execution Summary section	On paper copy and video tape of TF AAR
Summary of TF Mission	In Mission Execution Summary section	First part of TF AAR (w graphics)
TF Organization	Not available.	TF organization on video tape of TF AAR.
	Rifle company organization in Company THP.	Rifle company organization also in Company AARs.
BOS	Summary in System Summary for Phase section	Summary at end of TF AAR (paper & video tape)
	BOS Summaries for Rotation in Battalion Task Force Trends annex	Not available in mission TF AARs
Enemy Mission	Not available	On TF AAR video tape; sometimes on paper copy. Enemy commander briefs mission at TF AAR. Enemy briefings part of Company AARs.
Enemy Organization	Not available	On TF AAR video and paper copy

Both the task force and enemy organizations were documented in the TF AAR. Typically, this information was available on both the video-tape and paper copies. However, the task force organization was only in the video AAR. Additional information on rifle company organization was found in both the Company AARs and Company Annex of the THPs.

A critical finding was that the organization of the task force was found only in the video tape version of the TF AAR. This information is critical in interpreting other data

related to personnel casualties, mission success, etc., because cross-attachments often occurred. Rifle companies were not always employed pure. For some missions, rifle platoons were attached to a sister company; in some, a rifle platoon had a specific mission and was under battalion control. Similarly, the anti-tank (AT) platoon, scouts, and/or engineers could be attached to a rifle company, or they could be under battalion control.

In summary, both the TF AAR and the THP provided similar summaries of the task force mission, commander's intent, and BOS assessments. However, the task force organization, and enemy mission and organization were found in the TF AAR only.

Battle Damage Assessment

Another common area of interest for users of the JRTC archive is battle statistics, specifically, personnel casualties, equipment losses, and fire support data. Again, a comparison of the three data sources was made. However, it was determined that the T&EO data base does not contain battle damage assessment information. The only reference to casualties is when a task standard refers to the desired casualty rate for the enemy or the unit. No exact casualty figures are provided in the data base.

Task Force Assessment

Personnel casualties, equipment losses, and fire support data for each mission were reported in the archive. In both the THP and the TF AAR, personnel casualties were described in terms of starting strength, number killed, number wounded, number of wounded who died of wounds, number of fratricides, and number captured. These numbers were identical in the two sources. In no instance, THP or AAR, was there any written indication of whether these casualty data included numbers returned to battle. However, in one TF AAR, the senior O/C indicated that the task force figures did reflect reconstituted numbers. A further breakdown of the these numbers by task force unit (rifle company, antitank (AT) platoon, tactical operations center/headquarters (TOC/HQ), scouts, mortars, trains, air defense artillery (ADA), engineer, other) was given in the TF AAR. Rifle company casualties were also given in the company section of the THP and in the Company AARs. The enemy systems responsible for personnel casualties (direct or indirect fire, snipers, booby traps, mines, other) were presented in the TF AAR for all maneuver elements and sometimes for each rifle company. Table 2 summarizes this information. The formats used to report battle damage statistics in the THP and the AAR are presented in Appendix E.

Both the THP and the TF AAR presented the initial and final numbers of task force and enemy equipment (vehicle and aircraft). Both sources presented a killer-victim score board for enemy equipment. Thus we know what task force system killed or damaged enemy equipment. However, the "reverse" killer-victim score board, showing what enemy system caused task force equipment damage, was only available in the TF AAR (see Table 2).

Table 2

Mission Casualties, Battle Damage and System Effects: THP and AARs

	THP	AARs
Casualties		
Total for TF and Enemy (Start, killed, wounded, DOW, fratricide, captured)	In Bn TF Mission Summary section	In TF AAR
Casualties by TF element (Rifle company, scouts, AT, TOC/HQ, mortars, trains, engineers, ADA, etc.)	Rifle company data in Company section; No other TF element data	TF element data in TF AAR. Squad/platoon data in TF AAR. Rifle company data also in Company AAR
Source of TF Casualty (Direct & indirect fire, snipers, booby traps, mines)	Not available	In TF AAR for maneuver units and sometimes each rifle company
Equipment Losses		
TF and Enemy Losses by Weapon System	In Bn TF Mission Summary section	In TF AAR
Enemy Source of TF Equipment Loss (Tank, Grail, mines, demo, etc.)	Not available	In TF AAR
TF Source of Enemy Equipment Loss (Tank, TOW, CAS, mines, etc.)	In Bn TF Mission Summary section	In TF AAR
Fire Support		
TF Support by System (Missions fired, ammo expended, enemy casualties and equipment damaged)	In Bn TF Mission Summary section	In TF AAR
Enemy Support by System (Missions fired, ammo expended, TF casualties and equipment damaged)	Not available	In TF AAR
% Effective TF Missions	Not available	In TF AAR

Fire support data were also in both sources, but again the TF AAR had more formation (see Table 2). The THP included a fire support matrix which showed the number of missions fired by each fire support system (e.g., mortars, artillery, close air support, naval gun fire, attack helicopter). This table also cited the casualties, fratricides, and equipment losses attributed to each fire support system, and the total ammunition expended. The same matrix was in the TF AAR. The TF AAR also contained a similar matrix showing enemy fire support. Finally, the number and percentage of fire missions which were judged to be effective were shown in the TF AAR, both for the mission under review and cumulative over all missions to that point in the rotation.

The reasons for casualties and why systems or units were or were not effective on the battlefield is of great interest to users of the archive. Such answers can not be derived solely, however, from the statistical battle damage sections of the archival documents. Concluding that a company, platoon, or section is good or bad based on casualty or system effectiveness numbers greatly oversimplifies the situation and does not lead to appropriate home station training recommendations. A variety of factors can yield the same battle damage, but can require quite different home station training strategies to improve performance. However, the descriptive sections of the THP and the AARs do provide insights to these important questions.

A good example of why other information in the THPs and AARs should be used to interpret battle damage statistics is fire support. Fire support missions may not have been executed because of communication problems, TOC casualties, indirect fire crew casualties, tactical reasons, limited number of rounds, and/or an inability of aviation to fly because of the weather. Missions, once executed, may not have been effective because of communication delays, a poor fire support matrix, failure to get eyes on the objective to adjust rounds and/or modify the fire support plan, and/or poor individual skills on part of the crews. Information on these factors is typically given in the THPs and/or the AARs. Both sources require considerable study in order to determine the constellation of factors at work within a specific rotation and/or whether systemic problems exist across many units.

In summary, the TF AARs contained more casualty, fire support, and equipment loss data than did the THPs. All the information in the THPs was found in the TF AARs. Explanations for the findings, however, can be found only by carefully examining the descriptive information on mission planning, preparation, and execution within the THP and the AARs.

Squad and Platoon Assessment

As shown in Table 2, rifle squad and platoon casualty data were in the TF AAR only. The information was in a squad status chart, which provided the starting and end strengths of each squad by platoon, company, and mission (refer to Appendix E). As indicated previously, the interpretation of these battle damage statistics requires other data. With ground troops, a critical factor affecting casualty rates is the degree of enemy contact. It

was determined, however, that the Company AARs could be used to document degree of enemy contact at the platoon level.

The location of each platoon and whether it had enemy contact were determined from information in the Company AARs. Specifically, platoons were coded as either having substantial contact or as having minimal or no contact. No contact included situations where the platoon was bypassed by the enemy or was the TF reserve element and saw little action. Minimal contact included incidents of silent kills at night, booby traps, a few indirect fire casualties, etc. Substantial contact occurred when the platoon encountered the main body, had repeated contacts with the same enemy element, or had contact with several enemy elements throughout the mission. Considering all missions, degree of enemy contact for each platoon could be determined from the Company AARs 92% of the time (i.e., in 58 of the 63 cases).

Platoon casualty rates were then examined as a function of mission and degree of enemy contact. The results showed clearly how average casualty rates can be misleading when factors such as degree of enemy contact are not considered. For example, the average casualty rate for the Search and Attack mission was 41%. However, for platoons with substantial contact it was 63%, and for platoons with minimal or no contact it was 3%.

In summary, the squad status chart in the TF AAR provides valuable data. However, these data should not be used in isolation to discriminate "effective" from "ineffective" platoons or "effective" from "ineffective" companies. The analysis showed that it was both necessary and possible to integrate information from the Company AARs, such as degree of enemy contact, in interpreting the casualty data.

Rifle Company Task Performance

Company Tasks

In general, users of the archive need to know whether their conclusions regarding unit performance will be similar regardless of the data source used. Will dependence upon one source result in an unbiased impression of performance?

To address this question, information on the rifle company tasks performance and the quality of that performance was examined. Complete agreement among the three archival sources on the company tasks supporting each mission was not expected for several reasons. First, there is task overlap in T&EOs. For example, "perform personnel actions" is in "consolidate and reorganize," "consolidate and reorganize" is a subtask of both "assault" and "defend," "OPSEC" is a standard or subtask in many tasks, and aspects of planning and preparation are embedded in other tasks. Second, the criteria used by the O/Cs to determine whether a task should be rated were not known. Third, not all tasks performed need to be or are discussed in the Company AARs and THPs. Fourth, it is sometimes

difficult to discriminate company from platoon tasks in the AARs and THPs. Fifth, the AAR audio can be distorted, resulting in an incomplete documentation of tasks and events.

The company tasks in the T&EO data base were identified electronically by searching each company's data base for the tasks listed under each mission and/or mission phase. To identify tasks in the Company AARs and THPs, a content analysis was performed. The T&EO master list of company tasks (Appendix C) was applied to the company THPs and the transcript of the Company AARs. In coding the AARs and THPs for company tasks, only tasks which were explicitly discussed were listed. Tasks which might have been performed, such as consolidation and reorganization or OPSEC, but were not discussed were not listed. Phases I and II of the Search and Attack mission were combined for analytic purposes because the THPs did not discriminate between the two phases. Two raters identified the company tasks from a sample of three THPs (three different missions). The interrater reliability on the tasks (Krippendorff, 1980) ranged from .69 to 1.00 for an average of .83 per mission.

The company tasks identified from each source were then compared. However, unexpected problems in the T&EO data base and the level of detail in some THP sections affected the consistency among the data sources. In the T&EOs, TF mission was clearly coded incorrectly for some tasks for four of the six companies. The most extreme instance of this is shown in Table F-3, where many tasks coded under the Defend mission should have been coded under Search and Attack or Deliberate Attack. In addition, for the Deliberate Attack missions for two companies, there were no company tasks in the T&EO data base (see Tables F-5 and F-6). In the THPs, the sections on leader skills and individual skills identified company tasks not cited in the mission summaries. Because this information was not mission specific, it could not be used to identify company tasks performed during each mission.

The specific tasks identified in the three sources for each company in the sample are listed in Tables F-1 through F-6. The degree of agreement among the sources is summarized in Table 3. Overall, more tasks were identified for each mission in the Company AAR; the least in the T&EO. The T&EO was also the least reliable source, in that no tasks were listed for some companies and erroneous tasks listed for others. Both factors account for the wide spread in the numbers in Table 3. On the average, of all tasks identified, only 24% were cited in all three sources. The agreement among the three sources was relatively high for only one company, averaging 45% for the three missions (Table F-1). Considering the remaining companies and missions, the agreement never exceeded 33%. This was due in large part to problems associated with the T&EO data base.

When pairs of sources were examined for agreement, an average of 54% of the tasks were common to both the AAR and THP. Less consistency occurred between each and the T&EO. These findings are consistent with the fact that for 11 of the 18 company missions, the highest agreement was between the AAR and the THP (refer to Table F-7). However, the maximum consistency between any two sources (82% overlap in tasks for one company)

Table 3

Number and Percentage of Company Tasks Identified in the AARs, T&EOs, and THPs

	Mean	Range
# of Tasks		
All Sources Combined	11.9	9-18
AAR	9.0	6-12
THP	7.2	3-12
T&EO	6.3	0-15
% of Tasks		
Common to All Sources	24.2	00-45
Common to AAR and THP only	53.9	18-78
Common to AAR and T&EO only	33.7	00-82
Common to THP and T&EO only	27.1	00-50

occurred between the AAR and the T&EO (see Tables F-1 and F-7). This result was inconsistent with the generally lower agreement rates found when the T&EO was considered. With this particular company, however, there was no apparent miscoding of the TF mission in the T&EO data base and the data base was rather complete, in contrast with the other companies.

In summary, agreement among the three sources was not high. There was only one company where close to half the tasks were common to all sources. When only two sources were considered, the AAR and the THP were most likely to agree. The primary reason for these results stemmed from the inaccurate codes in the T&EO data base; company tasks were frequently not coded under the appropriate task force mission. Fober (1992) has documented this problem in depth as well as other problems associated with the T&EO data base. If all these problems can be corrected, higher agreement among the three sources will probably be found.

Any recommendation regarding the best source of information for company tasks, based on the sample in this research, is problematic. Identifying tasks from an AAR is a lengthy process. Creating a transcript of the audio AAR is the most time-consuming step. Then this information must be coded. Coding of a THP is relatively easy, but some critical tasks such as plan and prepare may not be identified by mission. The major problems associated with the T&EO data base have already been cited. These problems must be resolved before the T&EO is a good source for determining the tasks executed during each mission.

Company Performance

The original intent was to compare all three sources on the extent to which they depicted the same performance strengths and weaknesses at the company level. However, due to the problems encountered with the T&EO data base, this source was not included in the analysis. In addition, discussions of company performance in the TF AARs (audio tapes) were not used, given the selective nature of the rifle company information which focused heavily on execution.

The Company AARs were also excluded because they did not lend themselves to determining strengths and weaknesses. The Company AAR is a training vehicle. The O/Cs rarely made evaluative judgments such as "Only 50% of the defensive positions were prepared to standard" or "No OPs or LPs were established." Instead, the emphasis was on describing what happened, trying to determine why it happened, determining possible improvements, and determining each leader's understanding of the mission and his responsibilities. Consequently, the O/C might ask questions such as the following:

> Did you complete all of your defensive positions? Did they have 18 inches of overhead cover? Did you check your fields of fire from each position? Why did you have problems completing the positions; was it inadequate time or inappropriate allocation of time?
> What did your terrain analysis show you about where you needed LPs/OPs in your sector? Did you find out you needed them in mission execution?

Given the question-asking, nonevaluative dialogue between the O/C and the company leaders, it was deemed inappropriate to use the Company AAR to identify positive and negative aspects of performance.

Consequently, only two data sources were used to examine company performance, the THP and the hard copy of the TF AAR. Both sources contained information on company performance which indicated a strength or an area in need of improvement. In the THP, much of each company annex was written from an evaluative perspective (refer to Appendix B for outline of a typical company annex). In fact, the mission, leader skills, and individual skills sections were organized by "Strengths" and "Areas in Need of Improvement." The TF AAR included summary slides on the following four domains: Leadership and Individual Soldier Skills, Combat Planning Subtasks, Combat Preparation Subtasks, and Combat Execution Subtasks (refer to Appendix G). These slides included 26 specific areas. For each area, a brief statement was typically made about each company (e.g., Make a Tentative Plan: "Courses of actions incomplete - Company X, Poor METT-T analysis - Company Y, Planning improved from previous mission - Company Z."). Sometimes the reference was to all companies (e.g., Perform Operator Maintenance: "Operator maintenance improved in all companies. Weapons functioned."). Sometimes no comment was made.

All but one of the 26 specific areas listed under the four domains in the TF AAR summary slides corresponded to tasks in Salter's (in preparation) THP analysis (see Appendix D). Thus for 25 areas, it was possible to compare performance strengths and weaknesses as cited in these two sources. For each area and each company mission, the THP and TF AAR comments were coded one of four ways: as positive, negative, both positive and negative, or no comment. Each company received only one positive and/or one negative check for each rated area. This procedure controlled for potential O/C differences in the THP (areas of interest and expertise, writing style) and the spatial constraints of TF AAR briefing slides.

Salter's (in preparation) sample included the six companies in the present research. Salter's THP results for these six companies were used. The TF AAR slides had to be coded specifically for this research. Interrater reliability for two raters on a sample of the three different missions ranged from .75 to .83 with an average of .79. The majority of discrepancies between the raters resulted from ambiguity in the briefing slides, where it was not always possible to determine whether comments pertained to a specific company or to all companies.

Three forms of consistency between the two sources were defined. Agreement between the two sources meant the task or area ratings from both sources were the same (both positive, both negative, both positive and negative, or both no comment). Instances where one source had both positive and negative comments but the other had only positive (or negative) comments were also defined as agreements. A disagreement between the two sources was defined as a positive comment in one source and a negative comment in the other source. Finally, comments were classified as partial; that is, no comments in one source, but positive and/or negative in the other.

The percentage of cases in each of these classifications is reported in Table 4. Regardless of task force mission and domain, there were few disagreements between the THP and TF AAR (7% or less overall). For the remaining comments, agreement between the two sources was just as likely as partial comments.

Overall, the highest levels of agreement occurred within the execution domain for the missions of Search and Attack and Deliberate Attack (77% and 80% respectively). The specific areas within each domain for which there was high agreement were then identified. An area with a high level of agreement was defined was one where the two sources agreed in over half the companies (i.e., at least 4 of the 6), indicating that either source would yield similar results. These results are in Table 5.

Three trends emerged from this analysis. First, the THP and AAR comments agreed in only one area across all three missions. That area was communications. Second, the least agreement between the two sources was for the Defend mission. Third, for both the Search and Attack and the Deliberate Attack missions the agreement was much higher and was also in many of the same areas. The areas with high agreement common to both

missions, other than communications, were navigation skills, the leader's tentative plan, movement, actions on contact, consolidation, and reorganization.

Table 4

Consistency Between THPs and TF AARs on Company Performance Comments

	Mission		
Domain	S&A	Defend	Deliberate Attack
Agreement - % of cases			
Leadership & Individual	54	39	42
Planning	45	33	33
Preparation	23	30	33
Execution	77	43	80
All	50	37	45
Disagreement - % of cases			
Leadership & Individual	10	2	6
Planning	0	9	5
Preparation	13	3	10
Execution	7	0	7
All	7	4	7
Partial Comments - % of cases			
Leadership & Individual	35	58	52
Planning	55	57	62
Preparation	63	67	57
Execution	17	57	13
All	43	59	48

Note. Number of cases: Leadership and individual skills = 48 (i.e., 6 companies rated in 8 areas); Planning = 42 (6 companies, 7 areas); Preparation = 30 (6 companies, 5 areas); Execution = 30 (6 companies, 5 areas).

The results in Table 5 appear to reflect the emphasis the O/Cs placed on specific tasks in the different missions. In addition, Table 4 indicates that the primary reason the agreement percentages were not higher was because of the large percentage of partial comments; that is, where one of the source documents did not contain comments. When

comments were made in both documents, they agreed. Therefore, a comparison of the THP and the TF AAR for areas of agreement appears to provide an excellent indicator of task criticality and/or interest by the O/Cs.

Table 5

Areas of High Agreement Between the THP and TF AAR Ratings of Company Performance (based on TF AAR summary slides and company mission section of THP)

	Mission		
Domain	S&A	Defend	Deliberate Attack
Leadership & Individual	Communications	Communications	Communications
	Navigation	-----	Navigation
	Collect/Report Information	-----	-----
	Control Rate/ Distribution of Fire	-----	-----
	-----	Camouflage	-----
Planning	Tentative Plan	[None]	Tentative Plan
	Issue Order		-----
	-----		Initiate Movement
Preparation	[None]	Supervise	[None]
Execution	Movement	-----	Movement
	Actions on Contact	-----	Actions on Contact
	Consolidation	-----	Consolidation
	Reorganization	-----	Reorganization
	Maintain OPSEC	Maintain OPSEC	-----

Note. High agreement defined as THP and TF AAR agreement on strengths and weaknesses for at least 4 of the 6 companies.

Disagreements between the THP and the AAR were never concentrated in any specific area. For both the Search and Attack and the Defend missions, the most likely pattern of disagreement was a positive comment in the TF AAR paired with a negative comment in the THP (83% of the time). On the other hand, for the Deliberate Attack mission, positive and negative comments were equally likely from either source.

Almost all of the partial comments (87%) were attributable to a lack of comment in the mission section of the company THP. The fewest partial comments (11%) occurred for

Execution. The remaining were equally divided among the other three domains. This result should not be interpreted to mean that the THPs lack comments in these areas. They do not (see Salter, in preparation). Comments on leader planning and individual skills were in the THPs. However, they were in the summary sections on Leader and Individual Skills which followed all mission descriptions. As stated previously, because these comments were not presented for each mission, they could not be used in the mission analysis presented here.

Table 6 cites the areas where partial comments were frequent (i.e., in at least four of the six companies). In all cases, these corresponded to a comment in the TF AAR but no comment in the company THP mission section. Four areas were common across missions: Perform operator maintenance, use of night observation devices (NODs)/special equipment, issue warning order (WO), and brief backs. However, operator maintenance of equipment was commented on in the Leader and Individual Skills sections of the THP for all six companies. In contrast, there was little material on the use of NODs in the THPs, whereas the TF AARs presented a variety of positive and negative comments on their use. Finally, there was a high percentage of partial comments for the Defend mission. This may reflect, in part, the emphasis placed on planning and preparation versus execution for this particular mission. These areas were often stressed in the summary Leader and Individual Skills sections of the THPs, rather than in each mission section.

Two other factors must be considered when examining the incidence of partial comments. First, the analysis was conducted on a mission by mission basis. If a user of the JRTC archive is interested in an overall picture of strengths and weaknesses, then other sections within the company portion of the THP provide valuable information. Second, the findings may be, in part, an artifact of the TF AAR briefing slide format. In essence, it is a checklist, and the likelihood of errors of omission is thereby reduced.

In summary, when comments on performance in specific areas were made in both the THP and TF AAR, they agreed. The user of the archive could use this comparative approach as one way of identifying the most critical performance areas for mission success, and whether a company was strong or weak in those areas. Problems arise for the user of the archive when the area of interest narrows, being mission specific, condition dependent, or system unique. Under these situations, the contents of the THP and the TF AAR may diverge. All sources are important to examine in such instances. Finally, neither source exhausts all performance areas of interest. As indicated in Salter's (in preparation) analysis, more categories are possible using the THP. Given the brevity of the TF AAR slides, they certainly should not be the primary source for generating a complete picture of company performance. Finally, if problems with the T&EO data base are resolved, it should be a good source of standardized performance data.

Table 6

Areas With High Partial Agreement: Comments in the TF AAR and No Comments in the THP (based on TF AAR summary slides and company mission section of THP)

	Mission		
Domain	S&A	Defend	Deliberate Attack
Leadership & Individual	Perform Operator Maintenance	Perform Operator Maintenance	Perform Operator Maintenance
	Use of NODs, Special Eqmt	Use of NODs, Special Eqmt	Use of NODs, Special Eqmt
	Camouflage	-----	Camouflage
	-----	Noise, Light, Litter Discipline	-----
	-----	Control Rate / Distribution of Fire	-----
	-----	Navigation	-----
Planning	Issue WO	Issue WO	Issue WO
	-----	Complete Plan	Complete Plan
	-----	Initiate Movement	-----
	-----	-----	Reconnoiter
Preparation	Brief backs	Brief backs	Brief backs
	Improve/Change Plans	-----	-----
	Supervise	-----	-----
	-----	PCI	-----
	-----	Rehearsals	-----
Execution	[None]	Movement Consolidation Reorganization	[None]

Note. Tasks listed are those for which there were no comments in the THP for at least four of the six companies, but there were comments in the corresponding TF AAR.

Critical Incidents

A major challenge to the user of the JRTC archive is how to depict the dynamics of the battle; to describe the impact which events or processes have upon the mission. Such descriptions should go beyond statistical summaries, e.g., T&EO checklists, battle damage

assessments. They need to expand upon the Mission Execution Summary in the THP, which focuses primarily on events at the task force level. They are also needed to supplement lists of unit, leader, and soldier strengths and weaknesses. For example, the Company AARs are the primary means of determining the primary and secondary missions of each company, where the companies and platoons were located on the battlefield, their eventual role in the battle, and their impact upon the mission. The reasons for many actions are provided in these AARs. If a user of the archive is to thoroughly understand the dynamics of each mission, the AARs must be examined.

The TF Mission Execution Summary in the THP summarizes critical events, and highlights the task force elements having a major role in the mission outcome. Some event times are given, but not as many as in the TF AAR. Only general information is provided on each rifle company. Thus, although the THP is extremely useful, the detail needed for an in-depth analysis of battle dynamics and the context in which events occurred is provided in the AARs.

The approach used to summarize the AAR information was to generate a critical incident chart (Miles & Huberman, 1984), which shows sequentially the influential or decisive events for the task force and each company. Information for this chart came from the TF and Company AARs. However, the starting point was the key events slides in the TF AAR (paper copy). Key events slides were presented for the task force, each company, and sometimes for other task force elements (AT and/or scout platoons). They indicated the exact date-time-group when key events occurred (e.g., orders, initiation of movement, casualties, indirect fire missions), as well as casualty figures (see Appendix H).

To generate a critical incident chart for a mission, the essential information on the key events slides was integrated in a single two-dimensional (time by TF element) chart. Not all information on the slides was included. For example, casualty figures were omitted because not all casualties were accounted for on the slides. The key events data were then supplemented by explanatory and/or additional critical information from the transcripts of the audio TF and Company AARs. The final determination of what appeared in the chart was subjective, considering all information in the TF and Company AARs.

The analysis showed that relying only on the key events slides in the TF AAR was insufficient for depicting battle dynamics. The key events slides were supplemented with four types of information. First, when the company key events slides differed in detail, information from the Company AARs was added to present a balanced picture of company actions. Second, information on the impact of an event was included in the critical incident chart. The key events slides typically cited only the event and not its consequence, except for casualty data. Third, information on intelligence information possessed by the enemy, the weather, and availability of special assets (e.g., enemy air) was added. These factors were perceived to be critical in understanding the mission outcome and were usually not cited on the key events slides. Fourth, some factors which affect battle dynamics throughout the mission (lack of security, communication problems) were added. Again, these were not typically listed as events on the TF AAR slides.

An example of a critical incidents chart is in Table 7. Columns in the chart represent task force elements; rows represent time. The task force and each rifle company form four columns, plus an initial column for day and time data. The columns could be expanded to include other task force elements such as the scouts or AT platoon. For summary purposes, time within a twenty-four period was divided into four six-hour segments. Critical events are listed in the cells. Those viewed as having a particularly strong effect on the mission outcome are printed in bold type. Explanatory and supplementary notes are in italics. Similar information on all companies is presented whenever possible. Thus, percent defensive positions completed is cited for each company, although in some cases these data came from the TF AAR and in other instances from the Company AAR. Other factors which had an effect upon the mission are listed at bottom of the chart.

In examining Table 7, we find that the company OPORDs were issued at different times. Receipt of barrier material and engineer support also varied across companies. The cumulative effect of these events was varying states of preparedness by the defend time of 0001 on Day 4.

Common problems across companies that affected their ability to engage the enemy were limited fields of fire from individual positions coupled with kills by the enemy, attriting the task force strength. Some of these were silent kills. In Company X we find that 2d platoon, located in a key engagement area, was constantly in contact with enemy reconnaissance and stay-behind elements, hindering preparation of its defensive position. It was eventually rendered combat ineffective.

The company mortars were not effective for a variety of reasons. In Company X, this was due to an inadequate supply of rounds, despite requests for additional rounds. In Company Y, the mortars were never fired because of lack of communication with the fire support officer (FSO). Company Z's mortar section was taken out by a chemical attack at night. This, plus a check fire at the battalion level in progress at the same time, led to a failure to engage a dismounted enemy company with indirect fire. The enemy company passed through the task force sector successfully.

In addition to these events, the TF TOC was hit twice, communication problems affected execution of the fire support plan and the task force commander's ability to track the battle, and the scouts did not provide early warnings of the enemy. The enemy had planned its attack, cognizant of most of the task force obstacles. However, enemy vehicles were stopped by the task force due to effective close air support, muddy terrain created by recent rains, and a well-placed family of scatterable mines (FASCAM).

Finally, it should be mentioned that errors of omission in the archive can affect the adequacy of a critical incident chart. For example, conditions such as the terrain, weather, limited visibility, and chemical attacks associated with each mission were not described systematically in the THPs and the AARs. Instead, they were described by exception (e.g., weather prevented close air support on a specific day, the enemy did not go north because of heavily wooded terrain, the unit made a navigational error at night, units were or were

Table 7

Critical Incidents Chart: Integration of TF and Company AARs

TIME	TASK FORCE	X COMPANY	Y COMPANY	Z COMPANY
DAY 1				
1800-2400	Received Bde OPORD; Initial guidance to staff.			
DAY 2				
0001-1559				
0600-1159	Cdr conducted air recon; TF WO & concept brief to unit cdrs.	Co in Assembly Area.		
1200-1759		**CO OPORD (*issued before TF OPORD, 36 hours to 0001 Day 4*);** Plts in psn; Engineers arrive; Enemy contact - 2d plt.	CO WO; Leader recon.	Co(-) moving in psn; Started digging; Enemy contact.
1800-2400	Backbrief to Bde Cdr; Issued TF OPORD (*Specified task - be ready to defend at 0001 on Day 4; OPORD 29 hours prior to 0001, Day 4*).	Class IV material arrived.	Complete ldr recon (*> 5 hours, big sector*).	CO OPORD (*26 hours to 0001 Day 4*); Part of HQ elem & 1st plt missing; Class IV arrives at Co CP.
DAY 3				
0001-0559	Scouts did not detect enemy div recon	**2d plt in key engagement area - contact by enemy div recon.**	CO OPORD (*18 hours to 0001 Day 4*).	Enemy div recon penetrated sector unopposed, inflicted silent kills.
0600-1159	Cdr ground recon; **TOC hit by enemy air, key personnel lost.**	Engineers left; Cdr updated plt ldrs.	Engineers arrive; Plts in psn; Class IV arrives.	Engineers arrive.

Table 7 cont'd

1200-1759	Cdr recon continues; TOC re-established.	**2d plt, enemy contact; Psns 50% complete** (*psns had limited fields of fire*); Request for more 60mm rounds not filled.	Mtrs dig in.	Class IV arrives at 1st plt.
1800-2400	TOC displaced, Reestablished at new location in 1 hour; Scout casualties from enemy sniper.	Co at MOPP2; **2d plt - contact by enemy reg recon;** Psns covered, but Cdr not satisfied with state of preparedness.	**Psns 90% dug** (*no overhead cover, limited fields of fire*); FSO had no commo with 60mm mtrs, no 60mm missions fired.	Minefield emplaced in 2d plt sector; **Psns 60% complete** (*poor fields of fire*); Obstacles 40% complete; Cdr indicated not prepared to defend.
DAY 4				
0001-0559	Scout plt did not provide early warning of enemy (poor location).	**2d plt & AT - enemy contact** (*2d plt reduced to 5 men*); Co to MOPP4; **Dsmt enemy company came through sector, reached objective.**	Silent kills by enemy recon; Other enemy contact; **Dsmt enemy company came through sector, reached objective.**	**Enemy chem night attack. 60mm mtrs destroyed - not in MOPP - did not hear chemical alert** (*unable to fire at dsmt enemy Co in X & Y sectors & check fire at Bn*).
0600-1159	Enemy crossed battle hand-off line; **TOC hit by enemy arty barrage - casualties;** TF lost Cobras; **Enemy MRB slowed by muddy terrain & attrited by FASCAM and A-10s, enemy attack stopped.**	Enemy tank in 2d plt sector hit by A-10; Part of enemy MRB in sector.	Casualties from enemy arty barrage; Part of enemy MRB in sector; **Dragons oriented in wrong direction w no alt/supp psns.**	Casualties from several enemy indirect fire missions; Enemy MRB did not go through company sector.

Other Factors	Commo problems affected execution of fire support plan & TF cdr's ability to track battle. Intelligence plan needed more specifics on enemy routes, where likely to dismount, etc. Obstacle plan not fully integrated with fire support and ground plans. Enemy knew location of 80% of TF obstacles.

not well-prepared for the chemical attack). Nevertheless, when data on conditions were cited, the effects upon unit performance were clear.

In summary, the best sources for understanding the context of the battle are the TF and Company AARs. Because the AARs typically progress from the planning to the execution phase, they provide sequential data and the links between events which are often absent in the other archival sources. The dialogue between the O/C and unit leaders explains why plans were or were not made, tasks were or were not conducted, and why tasks were conducted in a certain manner. Information from the enemy leaders also contributes to an understanding of the mission outcome. The critical incident chart illustrated here is one way of summarizing this information.

Recommendations

Each archival record contains unique information. No single source is the best for addressing the variety of questions that could be asked about rotations at JRTC. The source which covers the greatest diversity of material and is also easy to use is the THP. When this is supplemented with the paper copy of the TF AAR slides and the audio TF AAR, the user of the archive will attain a good understanding of each mission and task force planning, preparation, and execution. If the user is investigating a specific issue, such as casualty evacuation procedures, night operations, fire support, navigation, or intelligence collection, then all data sources should be examined.

The video AARs provide a wealth of valuable explanatory information, and therefore must be used to address certain types of questions. However, an in-depth analysis of the tapes requires that a transcript be made, which is a very time-consuming process. The T&EOs could provide a standard means of comparing unit performance, but require statistical and computer expertise and must be checked for completeness and accuracy before use.

For the content areas examined in this report, the following recommendations are made:

TF Mission Summaries. The THP is the most user-friendly source for summaries of the mission, commander's intent, and battlefield operating system assessments. This information is also in the TF AAR, but not in the other sources.

TF Organization. This information is in the video TF AAR, but not in the other sources.

Enemy Mission and Organization. Use the TF AAR, video or paper copy. This information is not in the other sources.

Battle Damage Assessment. Refer to the paper copy of the TF AAR slides (also on the video version). Battle damage statistics found in the THP are a subset of those presented in the TF AAR. The TF AAR includes additional enemy and fire support data. Refer to the video TF and Company AARs for the information necessary to explain the battle damage statistics. Battle damage statistics are not in the T&EO data base.

Rifle Squad and Platoon Casualties. Casualty data are in the TF AAR only (video and paper copy). The Company AARs provide the information necessary to explain the casualty rates.

Rifle Company Tasks by Mission. If the T&EO data base is used, first check it for completeness and accuracy. If a search of the data base shows no company tasks for some missions, that company tasks such as defend and assault are coded under the wrong mission, or that mission phase codes do not agree with either the THP or the AARs, then the T&EO data base should not be used.

To identify company tasks from the THP and Company AARs, apply the T&EO master task list to these sources. Tasks which appear on both lists indicate areas emphasized by the O/Cs.

Rifle Company Performance by Mission. The T&EO data base should be the best source for company strengths and weaknesses. However, it should first be examined for completeness and accuracy as described above.

If T&EO data are not available, identify company strengths and weaknesses by coding the company THPs and comparing the results to the TF AAR summary slides. If time is limited, use the TF AAR summary slides only. The Company AARs are inappropriate for this purpose, and also require considerable effort to document.

Critical Incidents and Battle Dynamics. Use the TF and Company AARs. Based on TF AAR key events slides (paper copy version is easiest to use), integrate critical task force and company events by time on one chart. Supplement with critical information from the TF and Company AARs which do not appear on the key events slides. The THPs can also be used to provide a general perspective of critical incidents and their consequences. The T&EO data base cannot be used for this purpose.

These recommendations are valid for the time period examined in the research. The recommendations may become less applicable if significant changes to the content and/or format of the archival records occur.

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APPENDIX A

OUTLINE OF A TYPICAL TASK FORCE AFTER ACTION REVIEW—FY90

Mission Summary
Brigade Mission and Commander's Intent
TF Mission and Commander's Intent
TF Organization
Enemy Mission and Organization

Areas to Sustain and Improve
Mission Planning and Preparation in Key Functional Areas (not necessarily in the following order)
- Intelligence Support
- Fire Support
- S-3 Plan
- Air Defense
- Engineers
- Aviation
- Scouts
- Command, Control, and Communications
- Combat Service Support
- Other Areas, as appropriate

Mission Execution
- TF Commander's Description
- Functional Areas Examined under Planning and Preparation
- Company Commanders' Descriptions

Enemy Commander Briefing

Key Events and Time Line
Battle Damage Statistics
Summary Slides
- Leadership and Individual Soldier Skills
- Combat Planning Subtasks
- Combat Preparation Subtasks
- Combat Execution Subtasks
- Battlefield Operating Systems

Comments by Commander, JRTC

APPENDIX B

OUTLINE OF A TYPICAL TAKE HOME PACKAGE[1]

PART I - BRIGADE TASK FORCE OPERATIONS

Annex A: Brigade Task Force Trends
Annex B: Aviation Trends
Annex C: Combat Service Support and Combat Support Trends
Annex D: Special Operations Forces Overview
Annex E: Brigade Task Force List of Audio-Visual Materials

PART II: - BATTALION TASK FORCE OPERATIONS

*Annex F: Battalion Task Force Mission Summaries

*1. Phase 1 (D-Day to D+N)

A. Mission: Conduct a ...
   (1) Mission Standards (a-n)
   (2) Mission Execution Summary
B. System Summary for Phase [By BOS]
   (1) Command, Control, and Communication
   (2) Intelligence
   (3) Maneuver
   (4) Fire Support
   (5) Air Defense
   (6) Mobility/Countermobility/Survivability
   (7) Combat Service Support
C. Personnel Casualties, Battle Damage, and Fire Support Data for the Mission
   (1) Personnel Casualties
   (2) Task Force Equipment Damaged or Destroyed
   (3) Task Force Weapon System Effectiveness
   (4) Task Force Fire Support Data

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[1] Based on Salter (in preparation). Sections examined in this analysis are marked with an asterisk (*). THPs for rotations in this research did not have a Brigade task force operations section.

*2. Phase 2 (D+N to D+ ...)

.....

*3. Phase N ...

*4. Personnel Casualties, Battle Damage, and Fire Support Data Summary

Annex G: Battalion Task Force Trends [By BOS]

*Annex H: Company/Battery/Platoon Trends

*1. Company A

A. Critical Tasks [List only]
B. Mission Task List
C. Mission Summary
  (1) Mission X
    (a) Unit Strengths (1-n)
    (b) Areas in Need of Improvement (1-n)
    (c) Personnel Casualties
  (2) Mission Y (a - c)
  (3) Mission Z (a - c)
D. Leader Skills
  (1) Unit Strengths
  (2) Areas in Need of Improvement
E. Individual Skills
  (1) Unit Strengths
  (2) Areas in Need of Improvement
F. Recommended Home Station Training (1-n)

*2. Company B

.....

*3. Company C

.....

4. (Company D)
5. (Tank Platoon)
6. Battery C
7. Headquarters and Headquarters Company
8. Scout Platoon
9. Antiarmor Platoon
10. 81mm Mortar Platoon
11. Combat Trains

12. Field Trains
13. Support Platoon
14. Brigade Maintenance Section (-)
15. Medical Platoon/Battalion Aid Station
16. Communications Platoon

Annex I: Battalion Task Force List of Audio-Visual Materials

APPENDIX C

RIFLE COMPANY TASK LIST IN THE T&EO DATA BASE

T&EO#	TASK TITLE
77	Perform Air Assault
80	Assault
86	Defend
96	Establish Patrol Base/Hide Position
100	Conduct Passage of Lines
102	Perform Linkup
103	Infiltrate/Exfiltrate
111	Occupy Assembly Area
112	Breach an Obstacle
116	Move Tactically
117	Consolidate and Reorganize
120	Conduct Actions on Contact
123	Process Captured EPW/Material
124	Perform Logistical Support
125	Perform Personnel Actions
128	Employ Fire Support
129	Perform Reconnaissance
610	Develop and Communicate a Plan based on Mission (Co)
612	Prepare for a Combat Operation
613	Maintain Operations Security (Co)

APPENDIX D

COMPANY TAKE HOME PACKAGE CHECKLIST[1]

PLAN: TLPs

Receive the mission*
Issue warning order*
Tentative plan*
- Factors of METT-T
- OCOKA
- Estimate of situation/mission analysis
- Courses of action/wargame

Initiate movement*
Leader recon*
Complete the plan*
OPORD Prep/deliver*
- Content
- Correct format
- Key personnel

Refine/react to change*

PREPARE: SUPERVISE/SPOT CHECK*

Briefbacks*
Rehearsals*
Time management
Assembly area procedures
- Rest/alert plan

Precombat inspections*
- Weapons/equipment/vehicles
- Personnel
- Soldier load

Perform operator maintenance*
Camouflage self and position*

---

[1] Check list used by Salter (in preparation). Areas common to the TF AAR summary slides are indicated by an asterisk (*).

Movement*
- Tactical movement*
- Correct formations*
- Routes - covered and concealed
- Breach obstacles
- Knock out bunker
- Use smoke
- Navigate*
- Know location*
- Link up/passage

Attack/MTC/S&A
- Actions on contact*
- Actions on objective*
- Fighting/battle position
- Individual movement techniques*
- Move as member of team*
- Fire and maneuver*
- Assault
- Raid
- Ambush
- Consolidation*

Defend
- Priority of work
- Select positions
- Alternate/supplementary positions
- Construct positions
- Obstacles - construct/cover
- Range cards/sector sketch
- Defend/actions on contact*
- Fire distribution and control*
- Retrograde/delay/withdraw
- Air defense

Maintain OPSEC*
- Noise/light/litter*
- Patrols/patrol base
- Recon & surveillance
- OPs/LPs
- Use NODs*
- Mines

Establish/maintain commo*
- Challenge/password
- Call signs/frequency
- Hand & arm
- COMSEC

Coordinate
- Internal
- External/adjacent

Collect/report information/ID*

Command and control
- Control fires*

Reorganization*
- Casualties
- EPWs

Employ fire support
- Mortars

Integrate external assets
Sustain/logistics

NBC
MOUT
Marksmanship
Morale/condition/health
Battle drills
AAR

Tactical SOP
Air assault operations
- Chalks
- PZ/LZ
- Brief
- Plans

Multiechelon training
Force-on-force

APPENDIX E

BATTLE DAMAGE ASSESSMENT TABLES IN TF AAR AND THP

PERSONNEL BDA		
	BLUFOR	ENEMY
START		
KIA		
WIA		
DOW		
FRATRICIDE		
CAPTURED		

Note. In TF AAR and THP.

CASUALTY ASSESSMENT (by Unit)							
UNITS	START	KIA	WIA	OTHER	CAP	DOW	FRAT
A CO							
B CO							
C CO							
AT							
TOC/HQ							
SCOUTS							
MORTARS							
TRAINS							
ADA							
ENGINEER							
OTHER							
TOTAL							

Note. In TF AAR and company data in THP.

BLUFOR CASUALTIES (by Enemy System)				
UNIT DESIGNATION [TASK FORCE, CO A, B or C]	KIA	WIA	OTHER	FRAT
Direct Fire				
Indirect Fire				
Snipers				
Booby Traps				
Mines				
Other				
Total				

Note. In TF AAR. Separate tables for each unit.

SQUAD STATUS CHART (BLUFOR)							
		A Co		B Co		C Co	
		Start	End	Start	End	Start	End
1st Plt	1						
	2						
	3						
2nd Plt	1						
	2						
	3						
3rd Plt	1						
	2						
	3						

Note. In TF AAR.

BLUFOR EQUIPMENT LOSS (BY ENEMY SYSTEM)								
	Tanks	TOW	Dragon	Stinger	Vulcan	60 mm	81 mm	105 mm
Start								
Mines								
Demo								
Tank								
BMP								
Indirect								
MG								
Sm Arms								
Grail								
Chemical								
MIG								
Frdly Fire								
Other								

Note. In TF AAR. THP cites BLUFOR equipment beginning and end strengths only, not the sources of equipment loss.

BLUFOR AIRCRAFT LOSS (by Enemy System)					
	UH-1	OH-58	UH-60	AH-1	CH-47
Start					
Demo					
Tank					
SA-7					
RPG					
Indirect					
MG					
Sm Arms					
MIG					
Frdly Fire					
Other					

Note. In TF AAR. THP cites BLUFOR equipment beginning and end strengths only, not the sources of equipment loss.

ENEMY EQUIPMENT LOSS (by TF System)						
	BMP	BRDM	T-62	SA-7	ARTY	MTRS
Start						
COBRA						
Tank						
TOW						
CAS						
Mines						
AT4/LAW						
Demo						
Arty						
Sm Arms						

Note. In TF AAR and THP.

FIRE SUPPORT - BLUFOR								
	60	81	105	155	ATK HEL	AC 130	CAS	NGF
Missions Fired								
Personnel Casualties								
Equipment BDA								
Fratricides								
Ammo Expended								

Note. In TF AAR and THP.

FIRE SUPPORT - OPFOR							
	76	82	120	122	122 MRL	152	CAS
Missions Fired							
Personnel Casualties							
Equipment BDA							
Fratricides							
Ammo Expended							

Note. In TF AAR.

FIRE MISSIONS (BLUFOR)				
SYSTEM	# MISSIONS		% EFFECTIVE MISSIONS	
	Mission X	Cum #	Mission X	Cum %
60mm				
81mm				
105mm				
155mm				
NGF				
AC130				
CAS				
Total				

Note. In TF AAR.

APPENDIX F

COMPANY TASKS BY MISSION

Table F-1

Agreement between Tasks in AARs, T&EOs, and THPs: Company U

SEARCH & ATTACK	DEFEND	DELIBERATE ATTACK
Tasks Common to All Sources		
Plan Patrol Base/Hide Position Fire Support Actions on Contact OPSEC	Plan Defend Fire Support Logistical Support	Plan Assault Fire Support Personnel Actions Move Tactically Actions on Contact
Tasks Common to AAR and THP only		
[None]	Prepare	[None]
Tasks Common to T&EO and AAR only		
Personnel Actions Consolidate & Reorganize Move Tactically EPW/Captured Material	Personnel Actions Consolidate & Reorganize OPSEC	Consolidate & Reorganize Infiltrate/Exfiltrate Occupy Assembly Area
Tasks Common to T&EO and THP only		
[None]	[None]	[None]
Additional Tasks in T&EO		
Logistical Support	[None]	Logistical Support OPSEC
Additional Tasks in AAR		
Prepare	Actions on Contact	Passage of Lines Linkup
Additional Tasks in THP		
[None]	[None]	Prepare

Table F-2

Agreement between Tasks in AARs, T&EOs, and THPs: Company V

SEARCH & ATTACK	DEFEND	DELIBERATE ATTACK[1]
Tasks Common to All Sources		
Plan	Plan	Assault
Move Tactically	Defend	Actions on Contact
Personnel Actions	OPSEC	Move Tactically
Actions on Contact		
Tasks Common to AAR and THP only		
Reconnaissance	Prepare	Passage of Lines
Prepare		Prepare
Tasks Common to T&EO and AAR only		
OPSEC	Logistical Support	[None]
Tasks Common to T&EO and THP only		
[None]	[None]	Consolidate & Reorganize
		OPSEC
Additional Tasks in T&EO		
Consolidate & Reorganize	Consolidate & Reorganize	Plan
Logistical Support	Actions on Contact	Personnel Actions
EPW/Captured Material	EPW/Captured Material	
	Personnel Actions	
Additional Tasks in AAR		
Occupy Assembly Area	Fire Support	Breach Obstacle
Additional Tasks in THP		
Defend	[None]	[None]

[1] For AAR data, company tasks for the Deliberate Attack mission were derived from the TF AAR since no Company AAR tape was available. Given the brevity of discussion regarding the company mission in the TF AAR, not all tasks performed were discussed. Thus, TF AAR provided an underestimate and an incomplete picture of the company tasks.

Table F-3

Agreement between Tasks in AARs, T&EOs, and THPs: Company W

SEARCH & ATTACK	DEFEND	DELIBERATE ATTACK
Tasks Common to All Sources		
Plan Personnel Actions OPSEC	Defend OPSEC Logistical Support	Plan Fire Support Personnel Actions
Tasks Common to AAR and THP only		
Air Assault Patrol Base/Hide Position Actions on Contact Move Tactically	[None]	Assault Infiltrate/Exfiltrate Move Tactically Actions on Contact Passage of Lines Linkup Reconnaissance Prepare
Tasks Common to T&EO and AAR only		
Fire Support	Plan Fire Support	[None]
Tasks Common to T&EO and THP only		
[None]	[None]	Consolidate & Reorganize
Additional Tasks in T&EO		
Logistical Support	Assault Infiltrate/Exfiltrate Passage of Lines Linkup Breach Obstacle Consolidate & Reorganize Air Assault Patrol Base/Hide Position EPW/Captured Material Personnel Actions	Logistical Support OPSEC
Additional Tasks in AAR		
Reconnaissance	Prepare Reconnaissance	Breach Obstacle
Additional Tasks in THP		
Linkup Consolidate & Reorganize	[None]	[None]

Note. Apparent T&EO error in TF mission code for many tasks under the Defend mission. The tasks of assault, infiltrate/exfiltrate, passage of lines, linkup, and breach obstacle clearly belong under Infiltration/Deliberate Attack. The tasks of air assault and patrol base/hide position pertain to the Search and Attack mission.

Table F-4

Agreement between Tasks in AARs, T&EOs, and THPs: Company X

SEARCH & ATTACK	DEFEND	DELIBERATE ATTACK
Tasks Common to All Sources		
Plan	Plan Defend	Plan Assault
Tasks Common to AAR and THP only		
Fire Support Prepare Actions on Contact Move Tactically Consolidate & Reorganize OPSEC	Prepare Actions on Contact Reconnaissance	Personnel Actions Prepare Actions on Contact Move Tactically Consolidate & Reorganize Infiltrate/Exfiltrate
Tasks Common to T&EO and AAR only		
[None]	Linkup Infiltrate/Exfiltrate	[None]
Tasks Common to T&EO and THP only		
[None]	[None]	[None]
Additional Tasks in T&EO		
[None]	Assault[1] Passage of Lines[1]	[None]
Additional Tasks in AAR		
Personnel Actions Logistical Support	Fire Support Personnel Actions Logistical Actions	Fire Support Passage of Lines Linkup
Additional Tasks in THP		
[None]	Move Tactically	[None]

Note. Few company tasks in T&EO data base regardless of mission.

[1] Assault was coded as a company task in the T&EO data base under two mission; reason for this is not clear. Passage of lines was apparently miscoded; should pertain to the Deliberate Attack mission.

Table F-5

Agreement between Tasks in AARs, T&EOs, and THPs: Company Y

SEARCH & ATTACK	DEFEND	DELIBERATE ATTACK
Tasks Common to All Sources		
Plan Move Tactically Reconnaissance OPSEC Actions on Contact	Plan Logistical Support Personnel Actions	[No company tasks for this mission in T&EO data base.]
Tasks in AAR and THP only		
Patrol Base/Hide Psn Prepare	Defend Actions on Contact Prepare	Plan Assault Passage of Lines Breach Obstacle Move Tactically Logistical Support Prepare OPSEC
Tasks in T&EO and AAR only		
Fire Support EPW/Captured Material Personnel Actions	Fire Support	[None]
Tasks in T&EO and THP only		
Consolidate & Reorganize Linkup Logistical Support	OPSEC	[None]
Additional Tasks in T&EO[1]		
Assault Defend Passage of Lines Breach Obstacle	Consolidate & Reorganize	[None]
Additional Tasks in AAR		
Occupy Assembly Area	[None]	Actions on Contact
Additional Tasks in THP		
[None]	Reconnaisance	Consolidate & Reorganize Personnel Actions

[1] Apparent T&EO error in TF mission code for some tasks under Search and Attack. "Defend" and "Breach Obstacle" belong under the Defend mission; "Assault" and "Passage of Lines" under Deliberate Attack.

Table F-6

Agreement between Tasks in AARs, T&EOs, and THPs: Company Z

SEARCH & ATTACK	DEFEND	DELIBERATE ATTACK
Tasks Common to All Sources		
Plan Move Tactically Fire Support	Plan Fire Support	[No company tasks for this mission in T&EO data base.]
Tasks Common to AAR and THP only		
Occupy Assembly Area Personnel Actions Actions on Contact Logistical Support OPSEC	Defend Logistical Support Prepare OPSEC	Plan Assault Move Tactically Actions on Contact Prepare
Tasks Common to T&EO and AAR only		
[None]	[None]	[None]
Tasks Common to T&EO and THP only		
[None]	[None]	[None]
Additional Tasks in T&EO[1]		
Assault Defend	[None]	[None]
Additional Tasks in AAR		
Reconnaissance Patrol Base/ Hide Psn	Occupy Assembly Area Actions on Contact Reconnaissance	Passage of Lines Logistical Support Personnel Actions OPSEC
Additional Tasks in THP		
[None]	Personnel Actions	Occupy Assembly Area

Note. Few company tasks in T&EO data base regardless of mission.

[1] Apparent T&EO error in TF mission code under Search and Attack. "Assault" belongs under the Deliberate Attack mission; "Defend" under the Defend mission.

Table F-7

Number and Percentage of Tasks Identified in the AARs, T&EOs, and THPs by Company

Company	TF Mission	# of Tasks by Source				% Task Agreement among Sources			
		All	AAR	THP	T&EO	All	AAR & THP	AAR & T&EO	THP & T&EO
U	S & A	11	10	5	10	45	45	82	45
	Defend	9	9	5	7	44	56	78	44
	Del Atk	14	11	7	11	43	43	64	43
V	S & A	12	8	7	8	33	50	42	33
	Defend	10	6	4	8	30	40	40	30
	Del Atk	10	6	7	7	30	50	30	50
W	S & A	12	9	9	5	25	58	33	25
	Defend	17	7	3	15	18	18	29	18
	Del Atk	15	12	12	6	20	73	20	27
X	S & A	9	9	7	1	11	78	11	11
	Defend	13	10	6	6	15	38	31	15
	Del Atk	11	11	8	2	18	73	18	18
Y	S & A	18	11	10	15	28	39	44	44
	Defend	10	7	8	6	30	60	40	40
	Del Atk	11	9	10	0	00	73	00	00
Z	S & A	12	10	8	5	25	67	25	25
	Defend	10	9	7	2	20	60	20	20
	Del Atk	10	9	6	0	00	50	00	00

APPENDIX G

TASK FORCE AAR SUMMARY SLIDES: SKILLS AND SUBTASKS

Leadership and Individual Soldiers Skills

Perform Operator Maintenance
Camouflage (You, Eqpt, Psn)
Noise, Light, Litter Discipline
Use of NODS, Special Eqpt
Collect/Report Info - SALUTE
Control Rate/Distribution of Fire
Communications
Navigation

Combat Planning Subtasks

Receive Mission
Issue Warning Order
Tentative Plan
Initiate Movement
Reconnoiter
Complete the Plan
Issue Order

Combat Preparation Subtasks

Supervise
PCI (Initial/Final)
Briefbacks
Rehearsals
Improve/Change Plans as Necessary

Combat Execution Subtasks

Movement
Maintain OPSEC
Update/React to Change*
Actions on Contact
Consolidation
Reorganization

* Category was not in Salter's (in preparation) THP coding scheme

APPENDIX H

FORMAT OF KEY EVENTS SLIDES IN TF AAR

UNIT KEY EVENTS [for TF, RIFLE COMPANY, AT, SCOUTS]

DTG	EVENT	RESULTS	
		BLUFOR	OPFOR

Note. Results refers to casualties. Fratricides are indicated by an asterisk.